Mississippi National River
and Recreation Area (MNRRA)
National Park Service

Trapped by History?

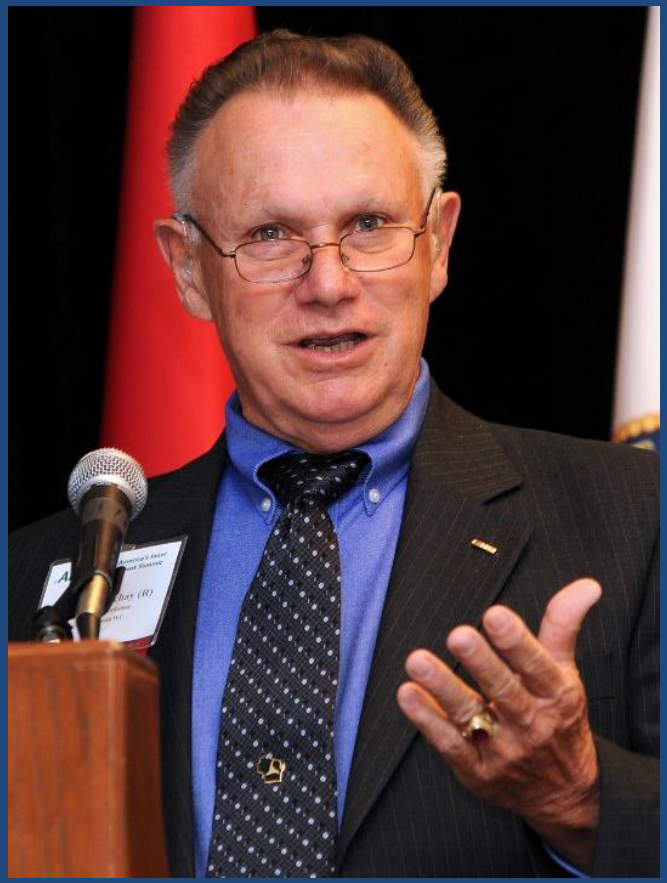
Mississippi River Forum
April 26, 2011

John O. Anfinson
Mississippi National River and Recreation Area
National Park Service

AICS America's Inner Coast Summit

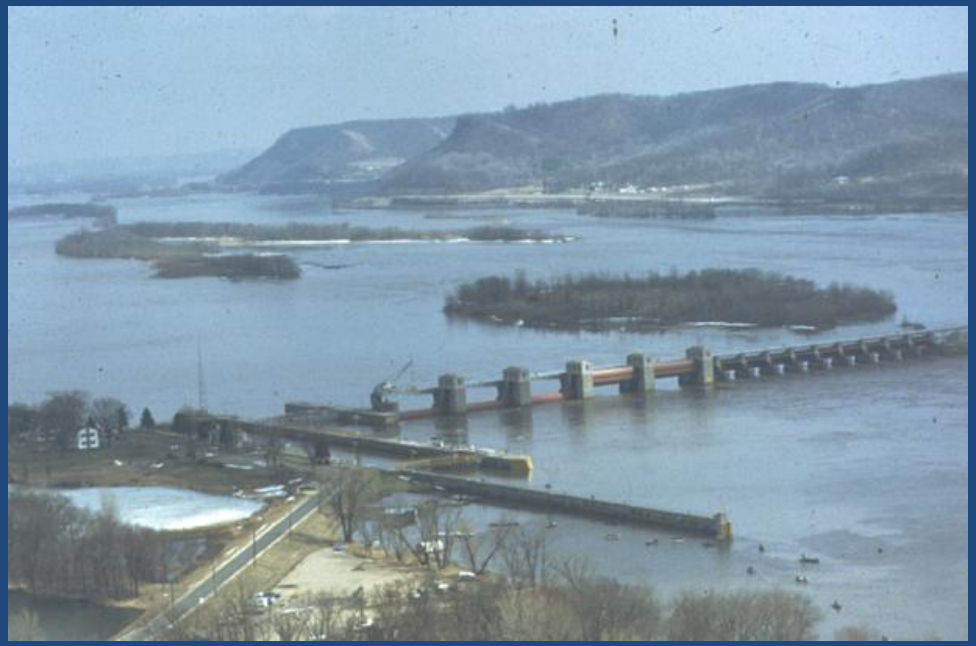
June 22-24, 2010 | St. Louis, MO

Post Summit Recap | Introduction | Facilitators | Speakers | Agenda | Registration Information | Hotel Information | Sponsors | Steering Committee | Contact Us



Terry Mulcahy,
Sand County Foundation

Major General Michael Walsh,
Mississippi Valley Division, COE



4th River ?

Dividing the Pie on the Columbia River?

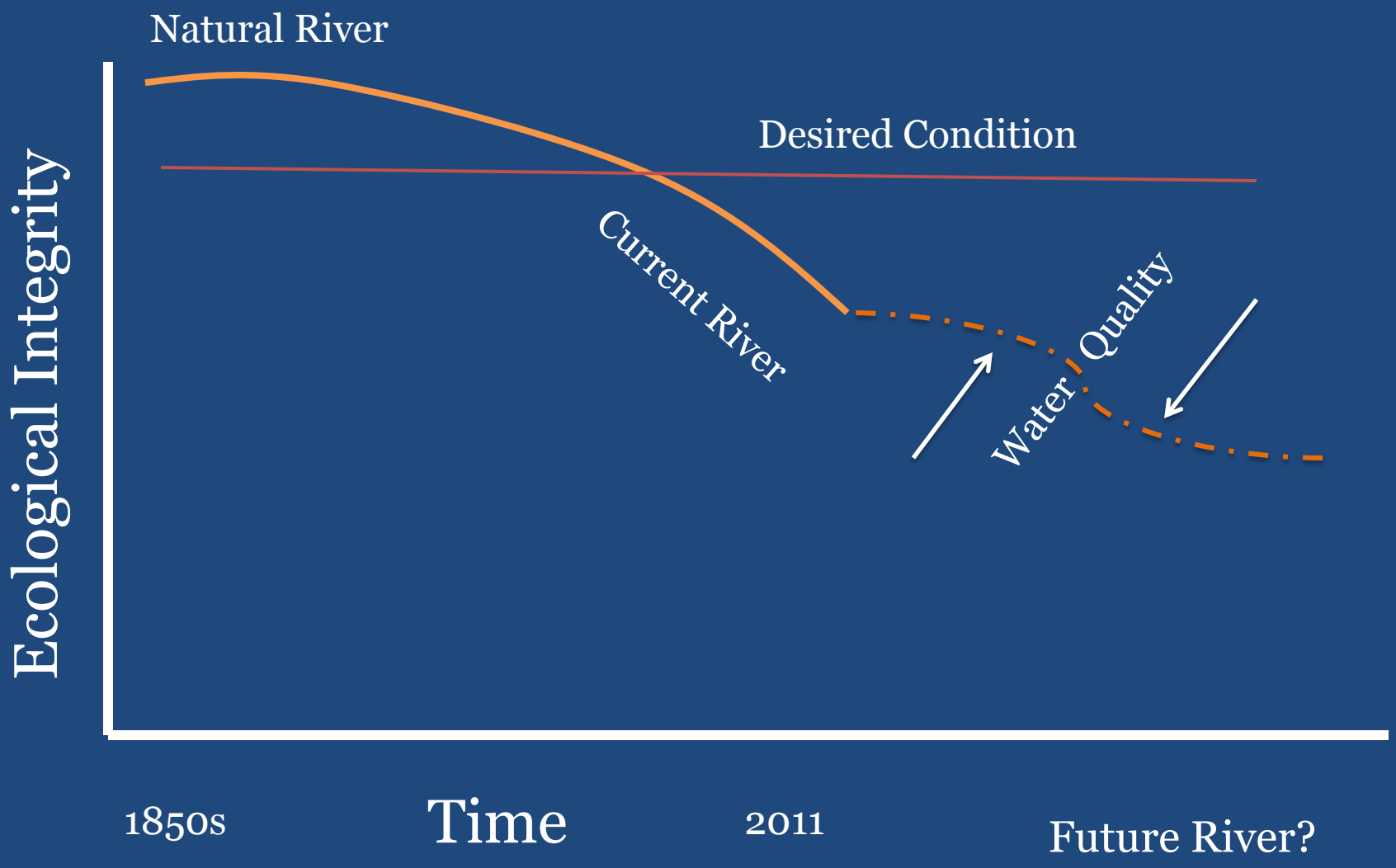
Grand Coulee Dam

Migrating Salmon

www.physics.uiowa.edu/.../nov_06-04.html

staff.washington.edu/jltran/My%20favorite%20g

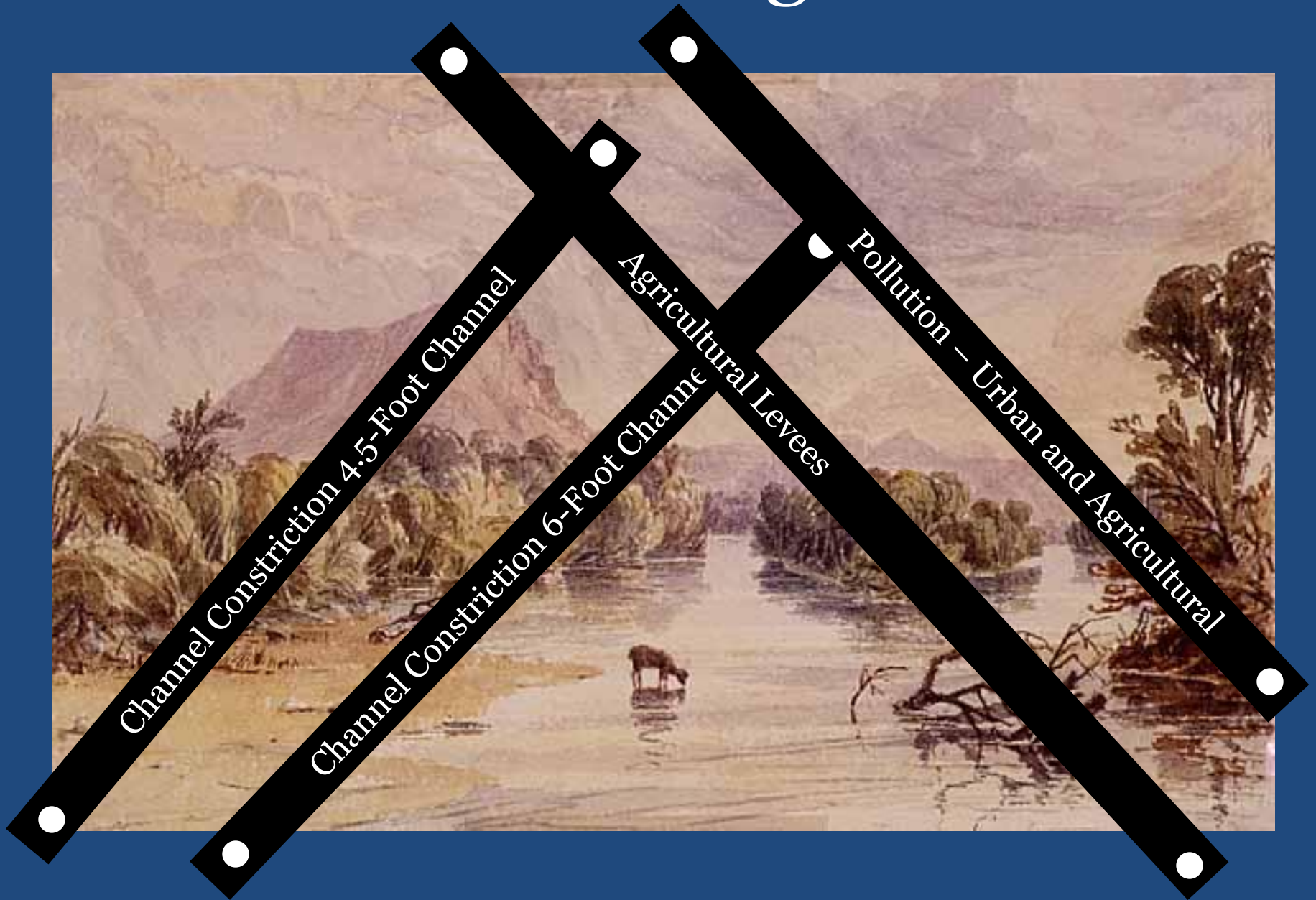
Ecosystem Decline



The West's Hydraulic Trap

Boulder Dam, Colorado River bridgepros.com/.../index.htm.

Building


Channel Constriction 4.5-Foot Channel
Channel Constriction 6-Foot Channe
Agricultural Levees
Pollution – Urban and Agricultural

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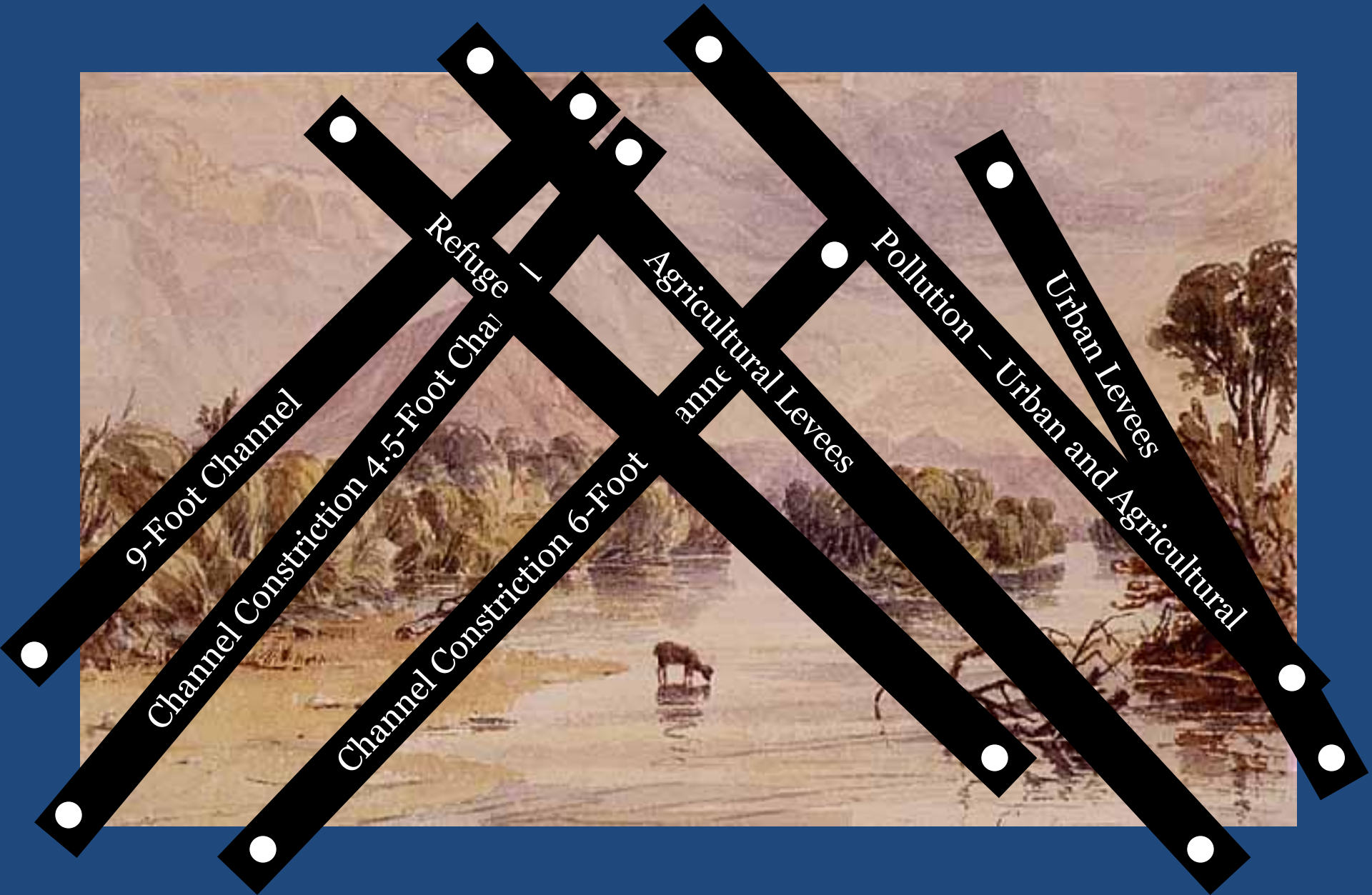
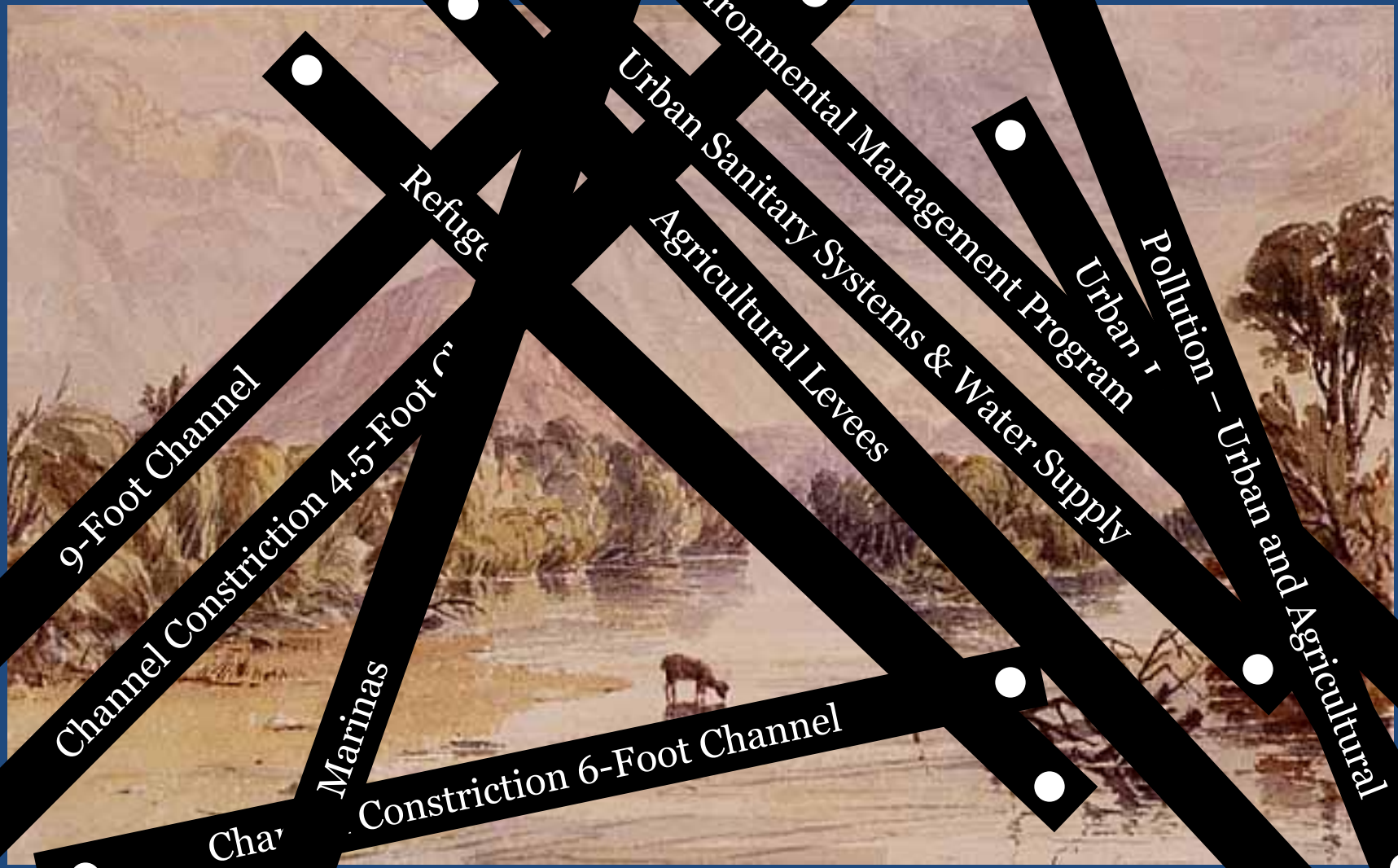

9-Foot Channel
Channel Constriction 4.5-Foot Chal
Refuge
Channel Constriction 6-Foot
anne
Agricultural Levees
Pollution – Urban and Agricultural
Urban Levees

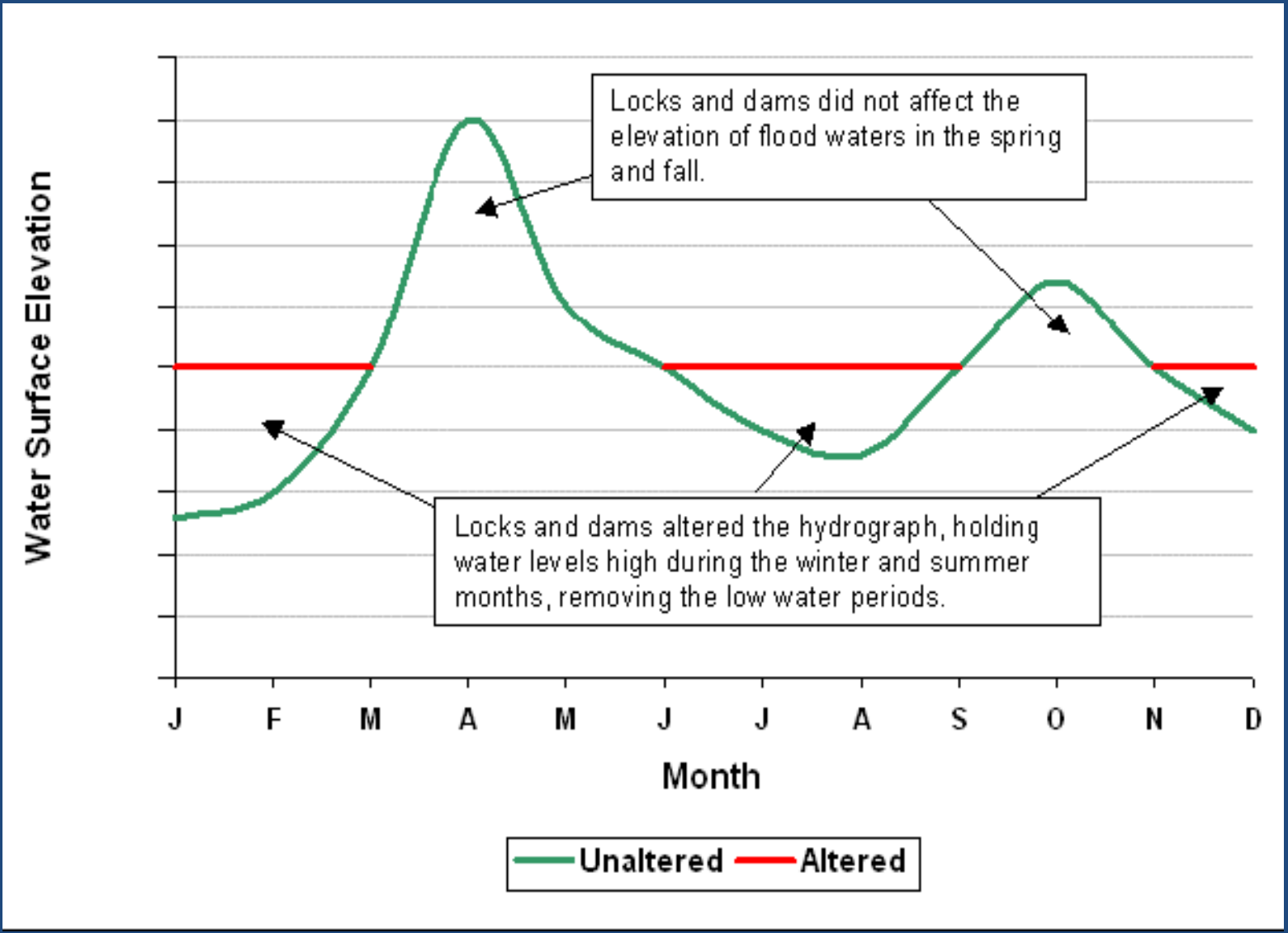
Hydraulic Framework



The Natural River

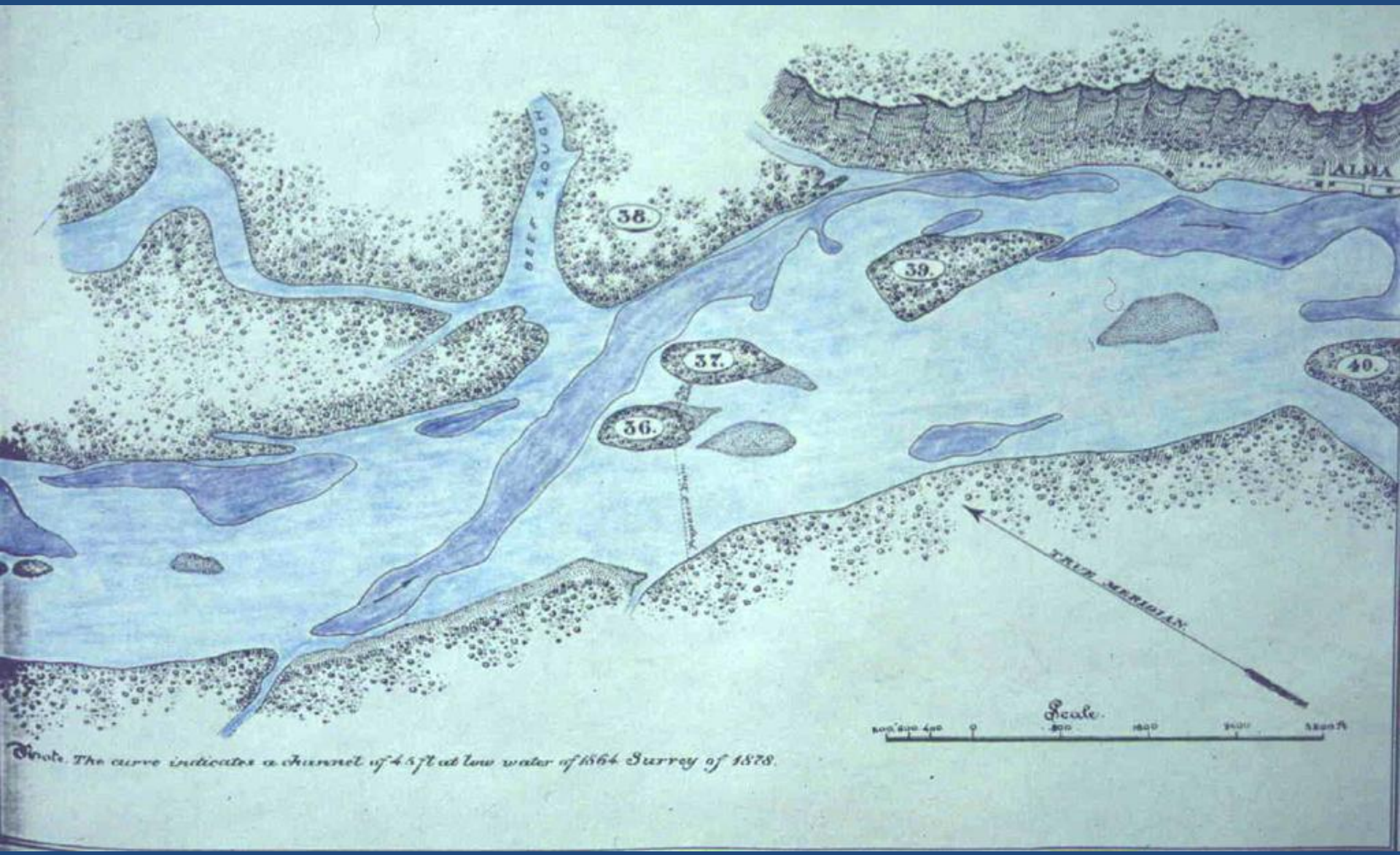
Minnesota Historical Society

Upper Mississippi River, Annual Hydrograph
Low end of pulse prevented



Environmental Pool Plans, River Resources Forum, 2004.

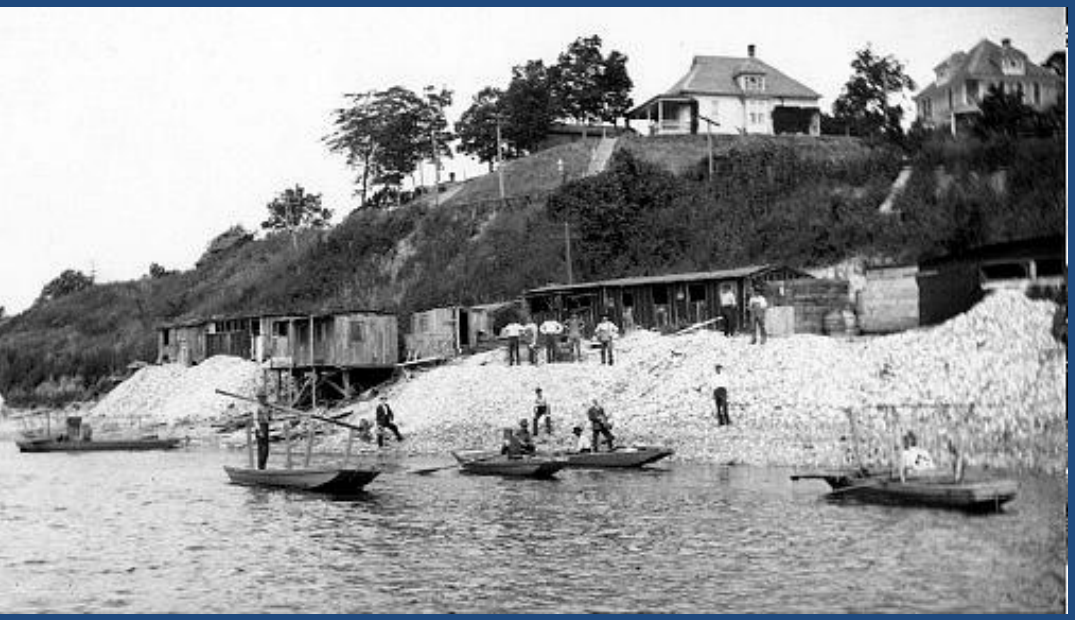
Map - Natural Channels



Light Blue - Less than 3 feet at low water

Sandbar at Queens Bluff

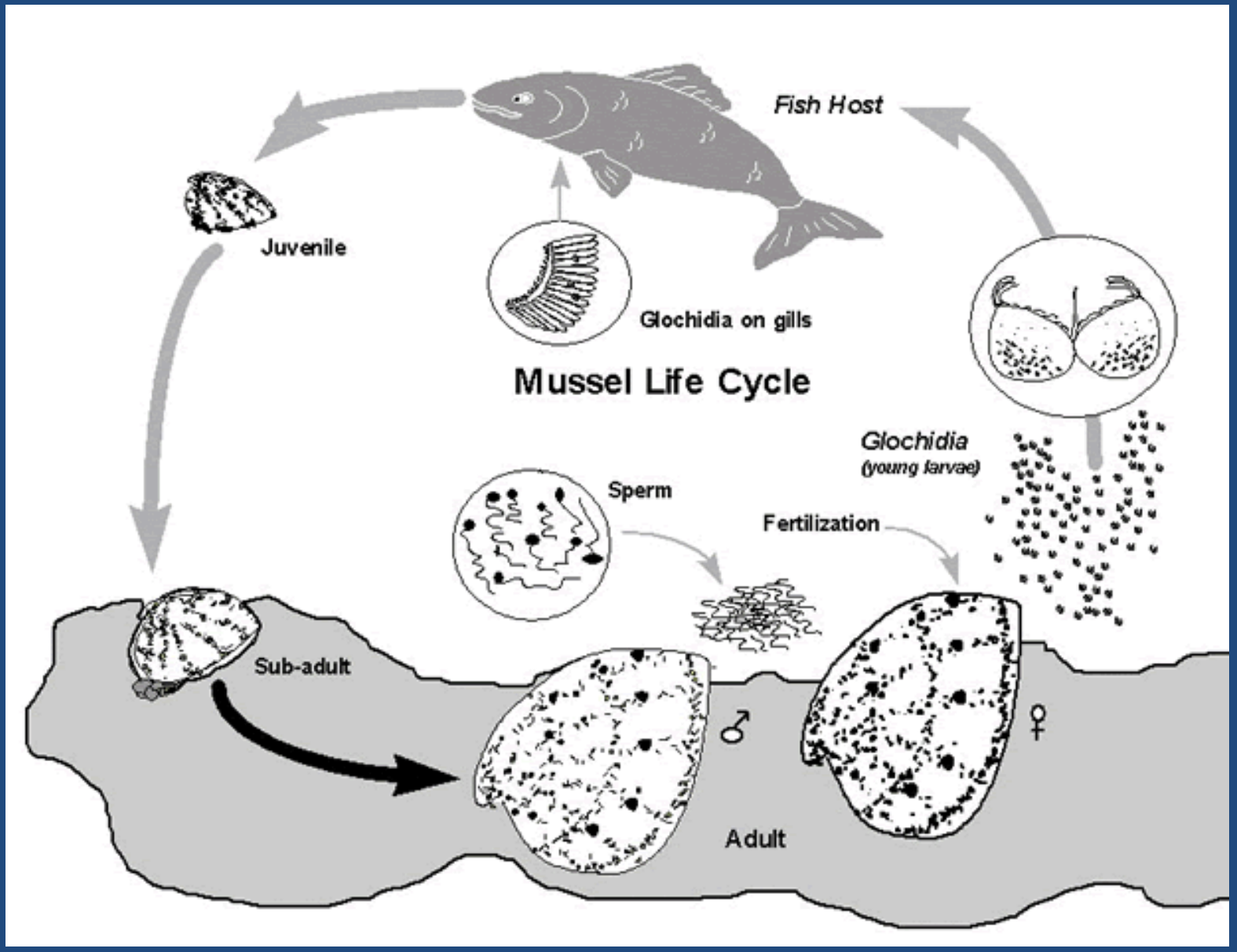
Henry P. Bosse. St. Paul District, Corps of Engineers



Harvesting mussels for buttons and pearls.

Pearl Buttons

www.fws.gov/midwest/mussel/harvest.html. Source: Oscar Grossheim Collection, Musser Public Library, Iowa.



University of Iowa

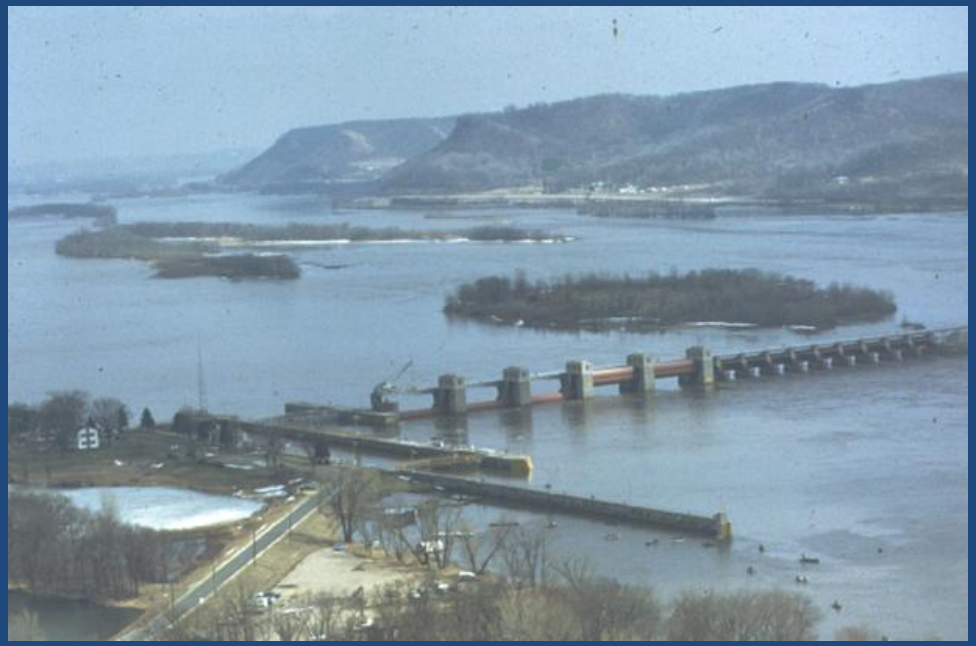
Mississippi River floodplain at Gorham, Illinois.

American Environmental Photographs Collection, [AEP Image Number, e.g., AEP-MIN73], Department of Special Collections, University of Chicago Library.

Bountiful Backwaters

Islands at Savanna, Ill.

Library of Congress, American Environmental Photographs



Three Major eras of Navigation Improvements

4-Foot Channel, 1866-1878

4.5 & 6-Foot Channels, 1878-1930s

9-Foot Channel, 1930s-Present

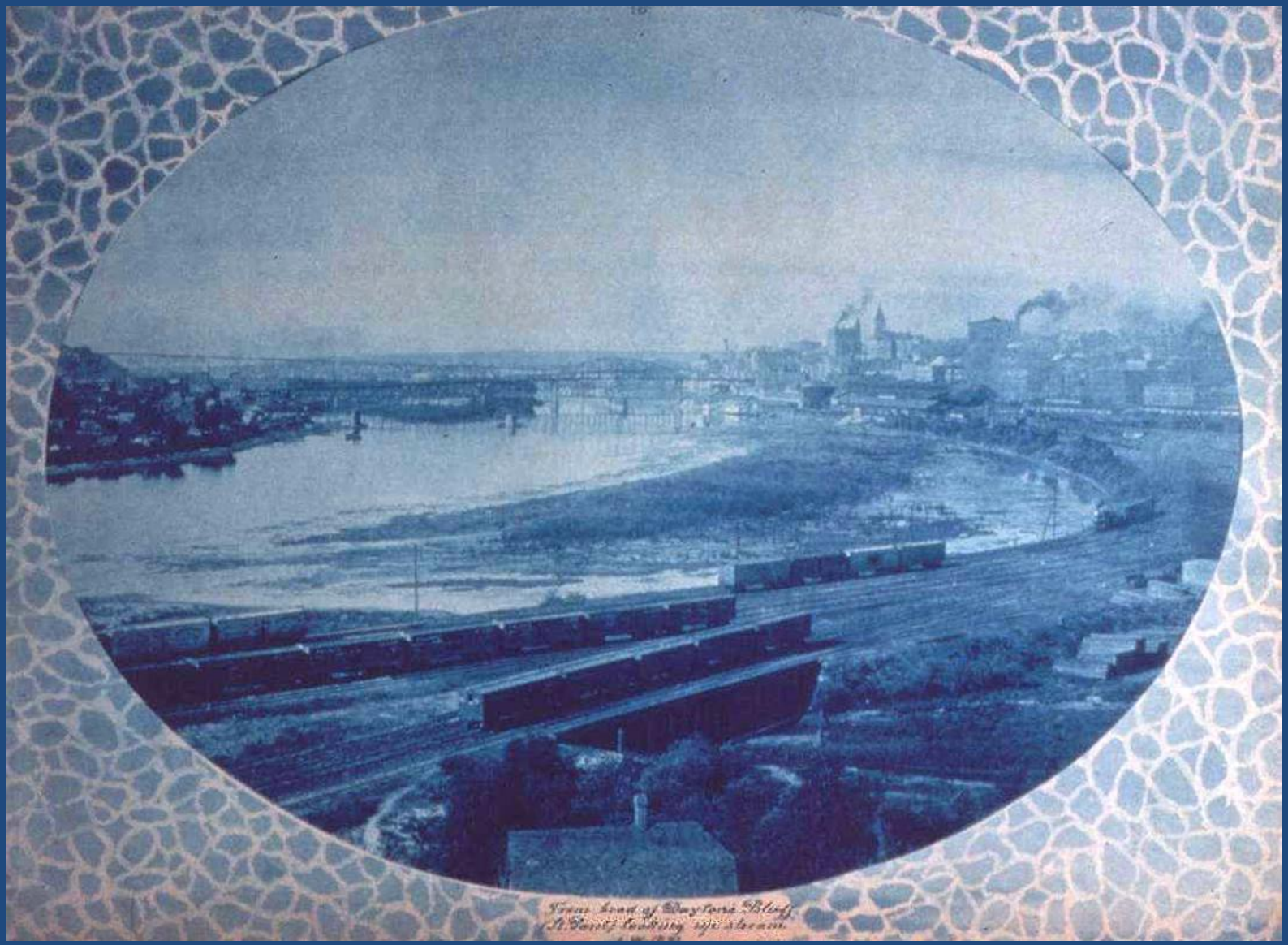
The Need for Navigation Improvements

. www.mvd.usace.army.mil/mrc/history/index.php

Snagging Scene

Henry P. Bosse, Rock Island District, Corps of Engineers

Railroads at St. Paul. Bosse

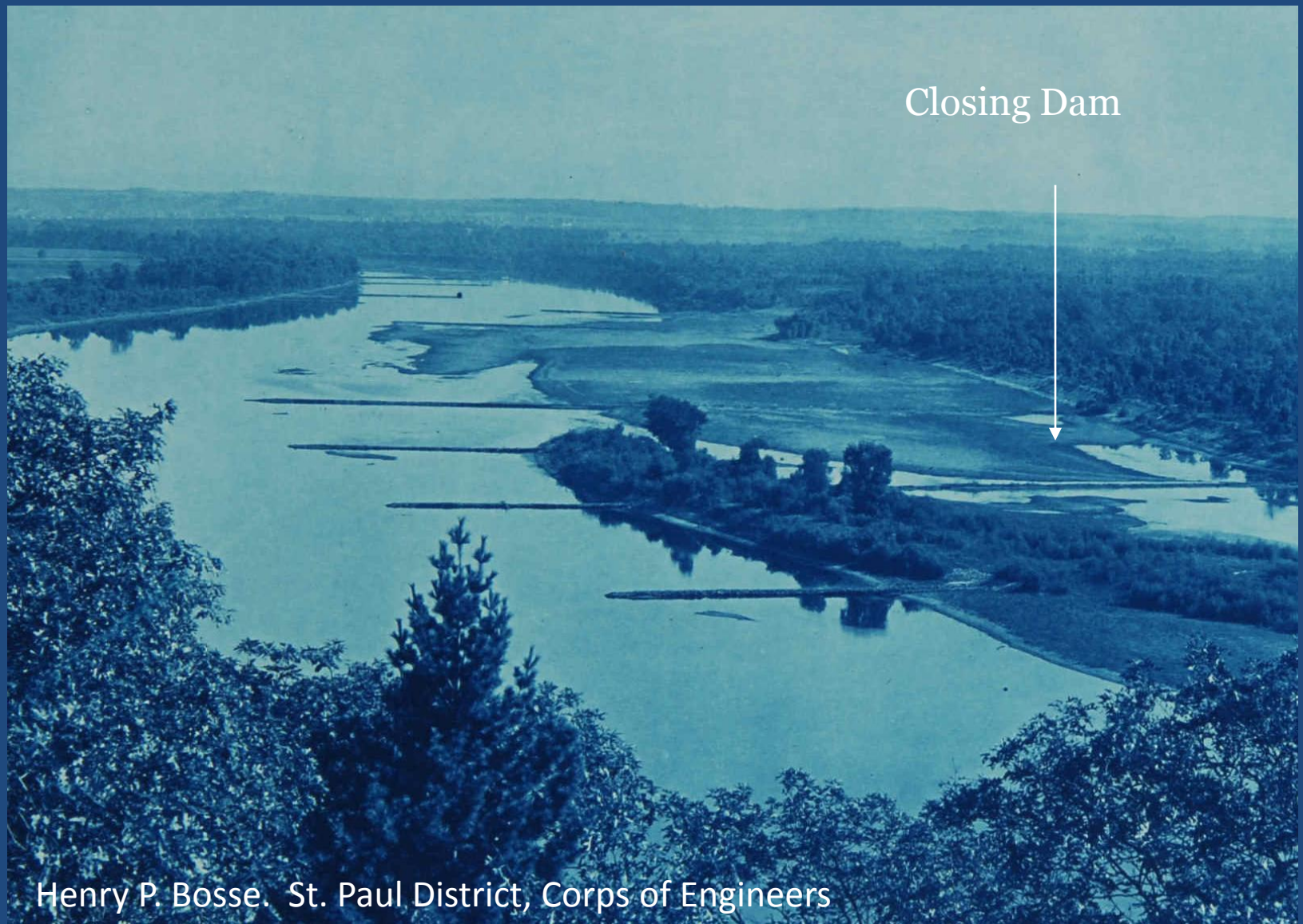


Henry P. Bosse, Rock Island District, Corps of Engineers

Wing dams below Nininger, 4.5-Foot Channel Project

Henry P. Bosse. St. Paul District, Corps of Engineers

Pine Bend, MN, 1891, 4.5-Foot Channel Project



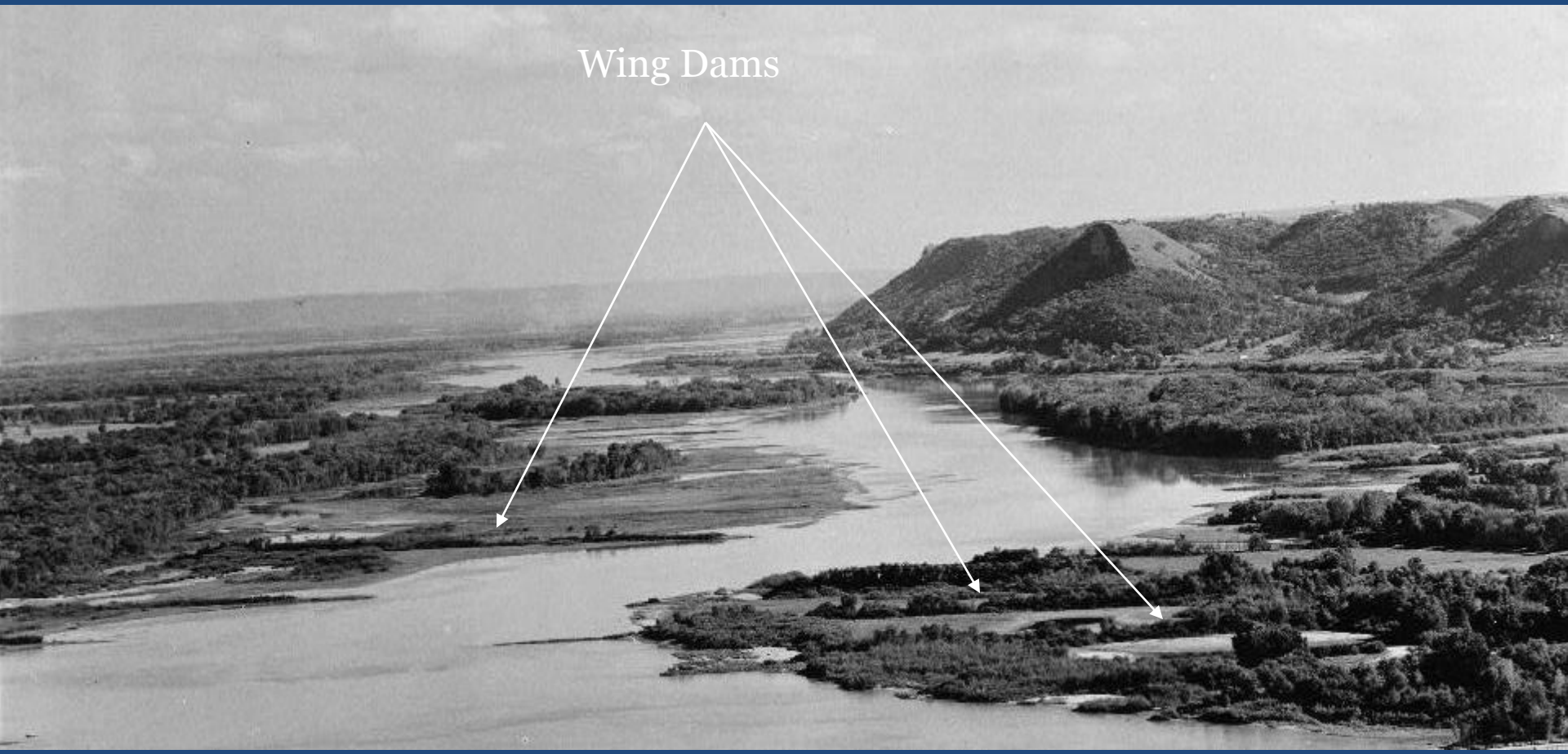
Henry P. Bosse. St. Paul District, Corps of Engineers

Channel Constriction, 6-Foot Channel

St. Paul District, Corps of Engineers

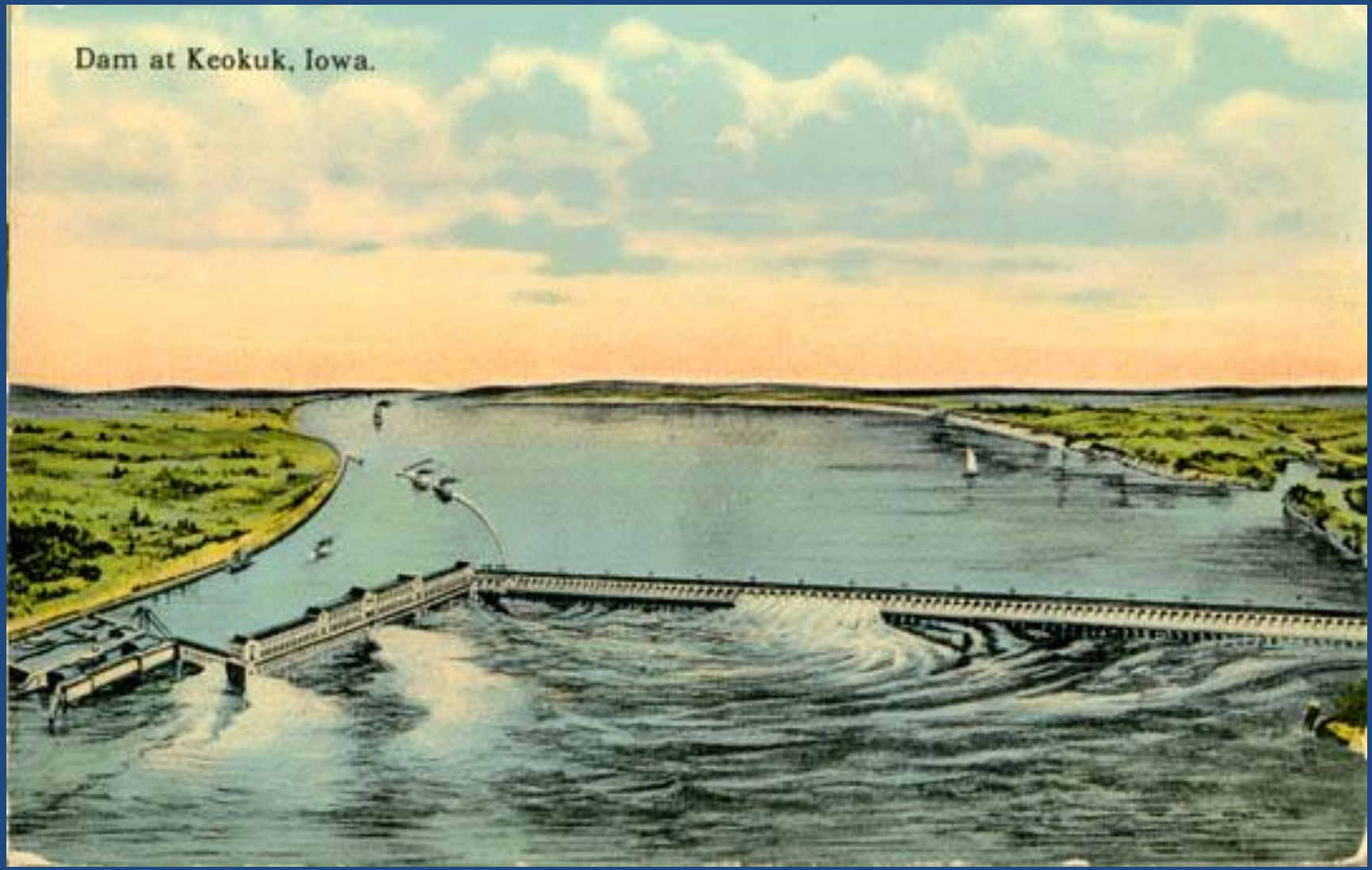
Growing the Banks. Above Hastings, 1927

Channel Constriction, 6-Foot Channel



St. Paul District, Corps of Engineers

Keokuk and Hamilton Dam (Lock & Dam 19), 1913, Keokuk



www.usgwarchives.org/.../postcards/pcs-lee.html

Lock and Dam No. 1, St. Paul

Minnesota Historical Society

Constricted Channel, Mississippi River below St. Paul, 1927

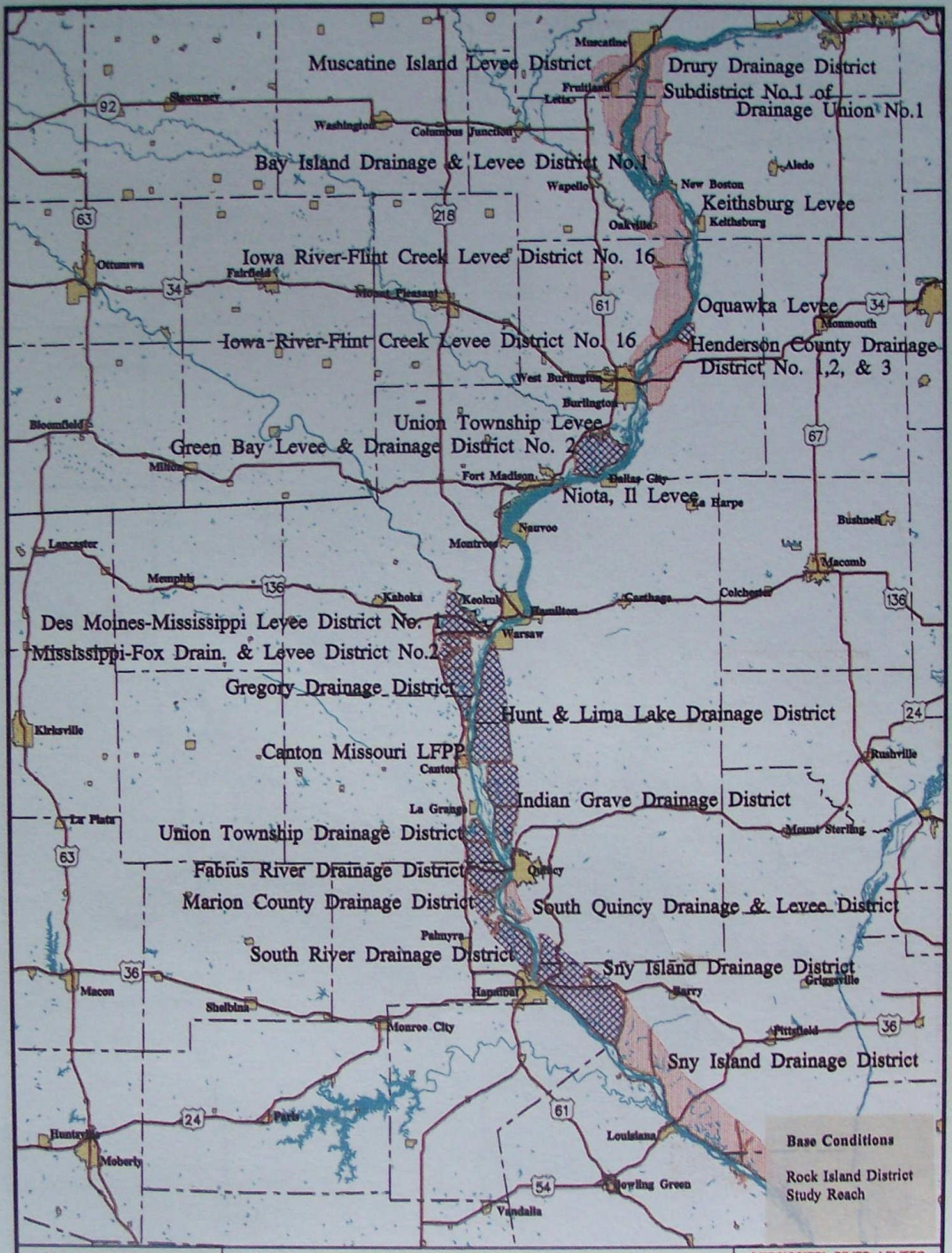
St. Paul District, Corps of Engineers

Floodplain Agriculture

Minnesota Historical Society

Mississippi River floodplain agriculture near Waterloo, Illinois

American Environmental Photographs Collection, [AEP Image Number, e.g., AEP-MIN73], Department of Special Collections, University of Chicago Library.



Floodplain Levees, Rock Island District

Floodplain Management Assessment, Corps of Engineers.

Mississippi River floodplain at Gorham, Illinois.

American Environmental Photographs Collection, [AEP Image Number, e.g., AEP-MIN73], Department of Special Collections, University of Chicago Library.

Will Dilg, Izaak Walton League co-founder & refuge champion

Izaak Walton League

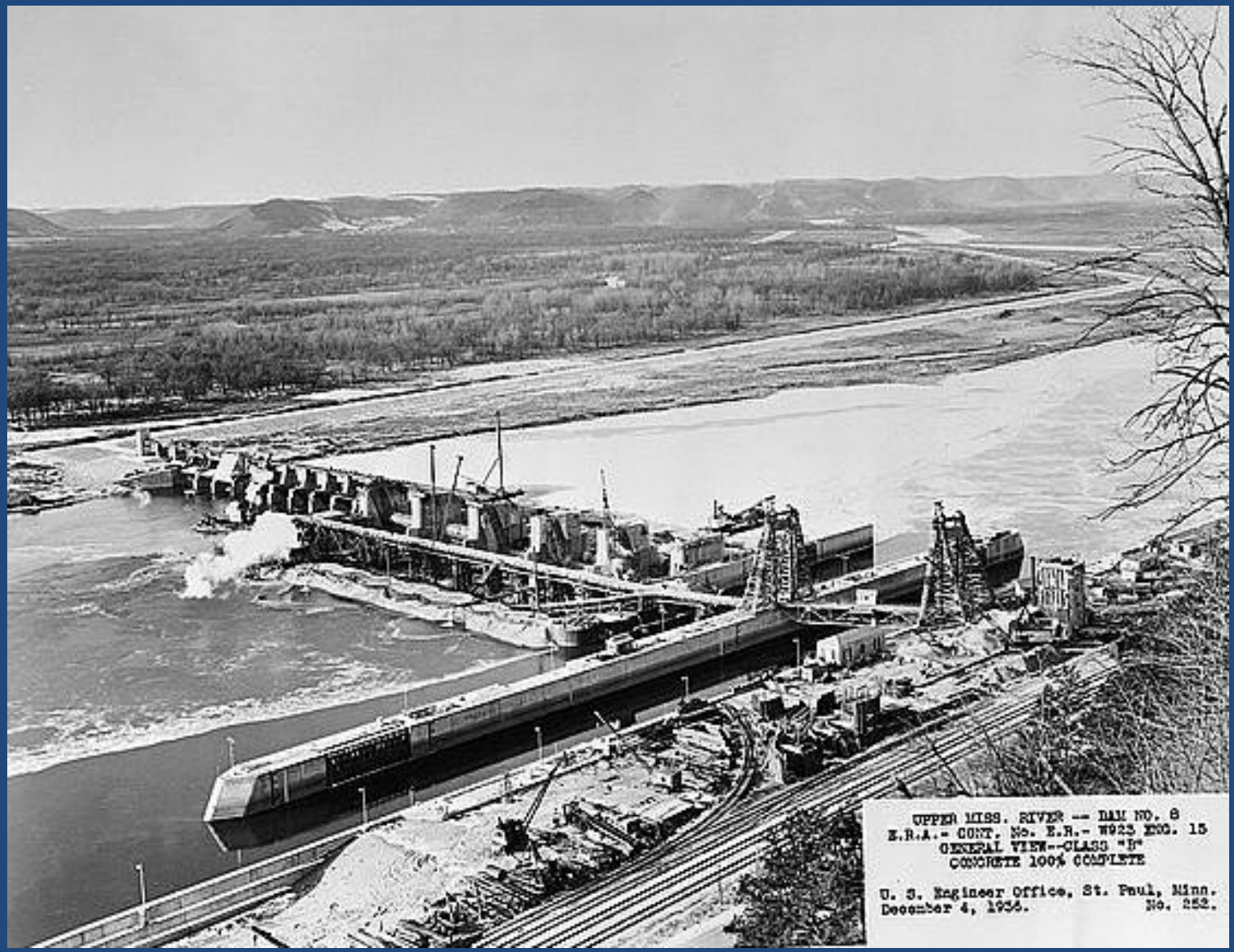
Mississippi River Floodplain

Upper Mississippi National Wildlife & Fish Refuge

Minneapolis-St. Louis RR

Minnesota Historical Society

Mississippi River, 9-Foot Channel Project

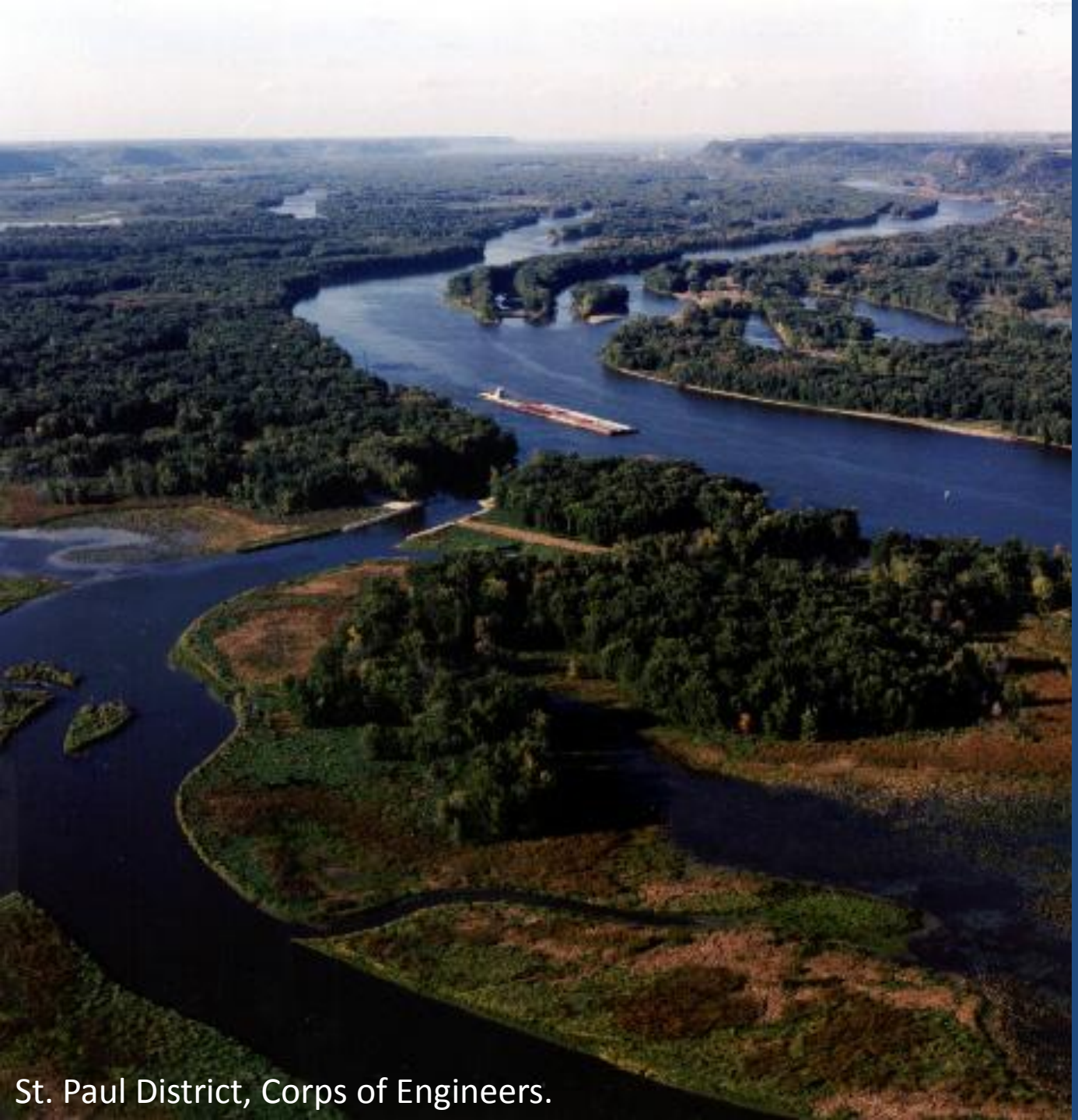


St. Paul District, Corps of Engineers

Refuge above Rock Island

Levees below Rock Island

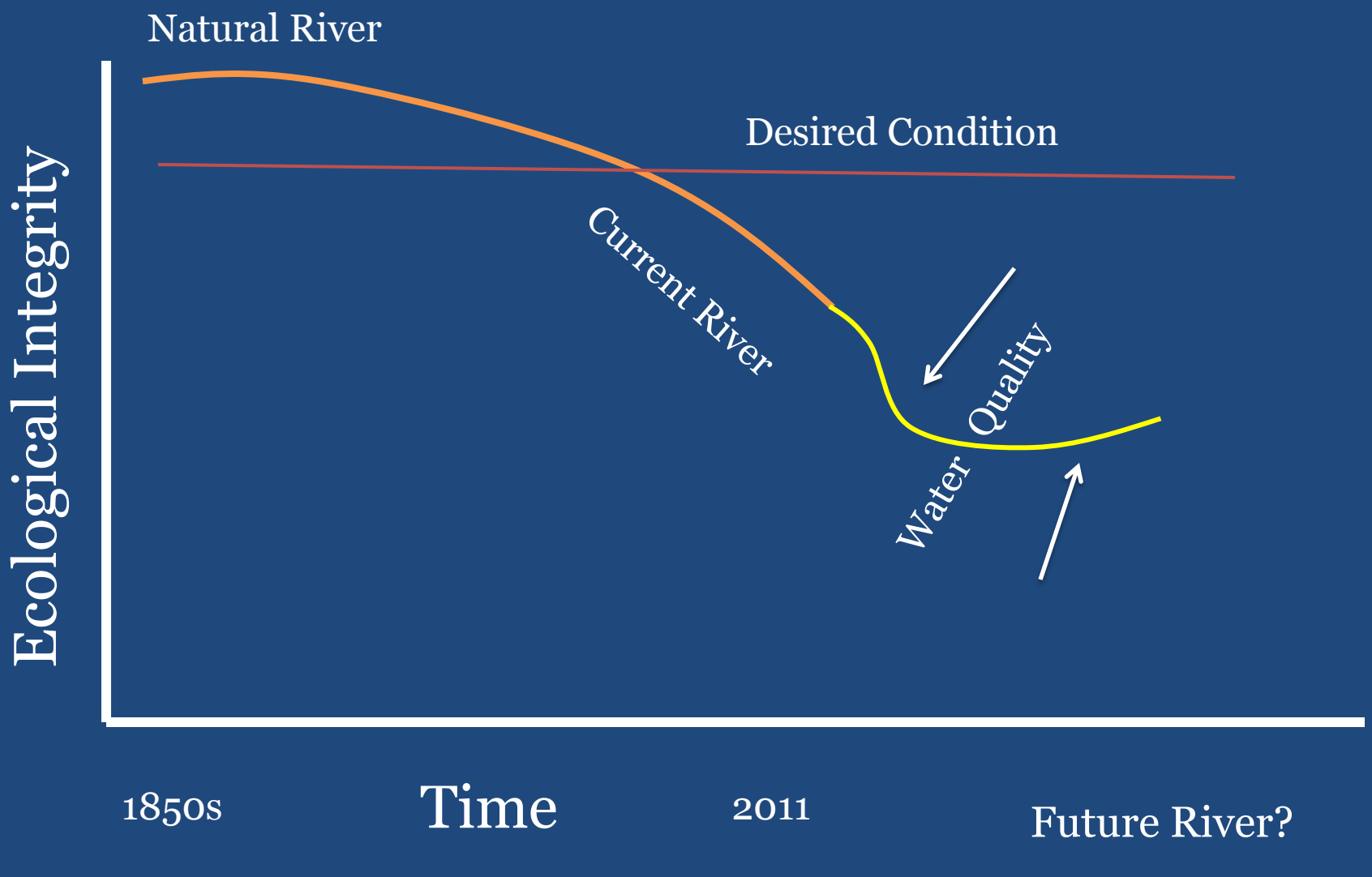
Channel constriction, whole Upper Mississippi River



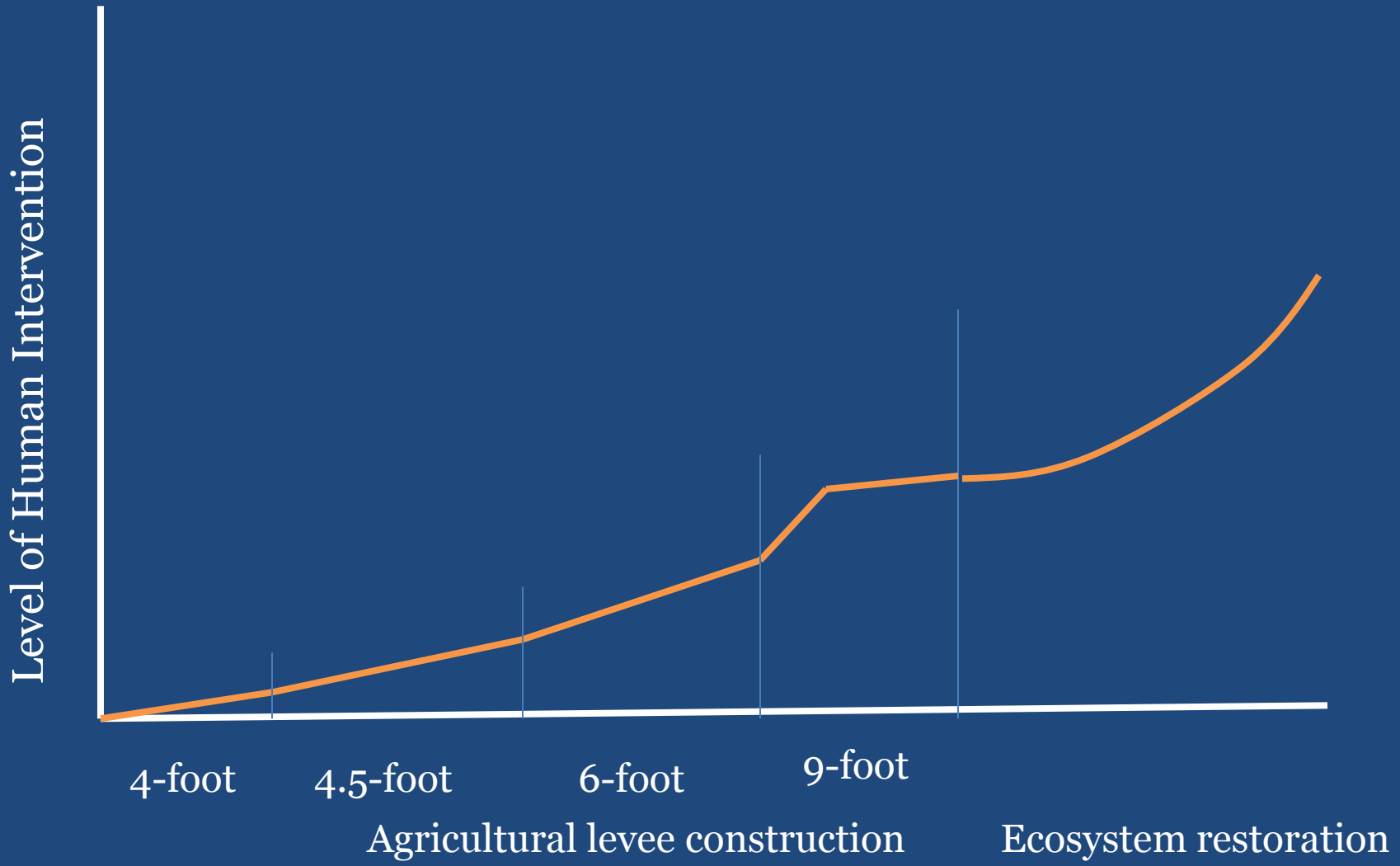
St. Paul District, Corps of Engineers.

WHAT KIND OF RIVER?

Ecosystem Decline & Recovery



Ever Increasing Human Intervention?



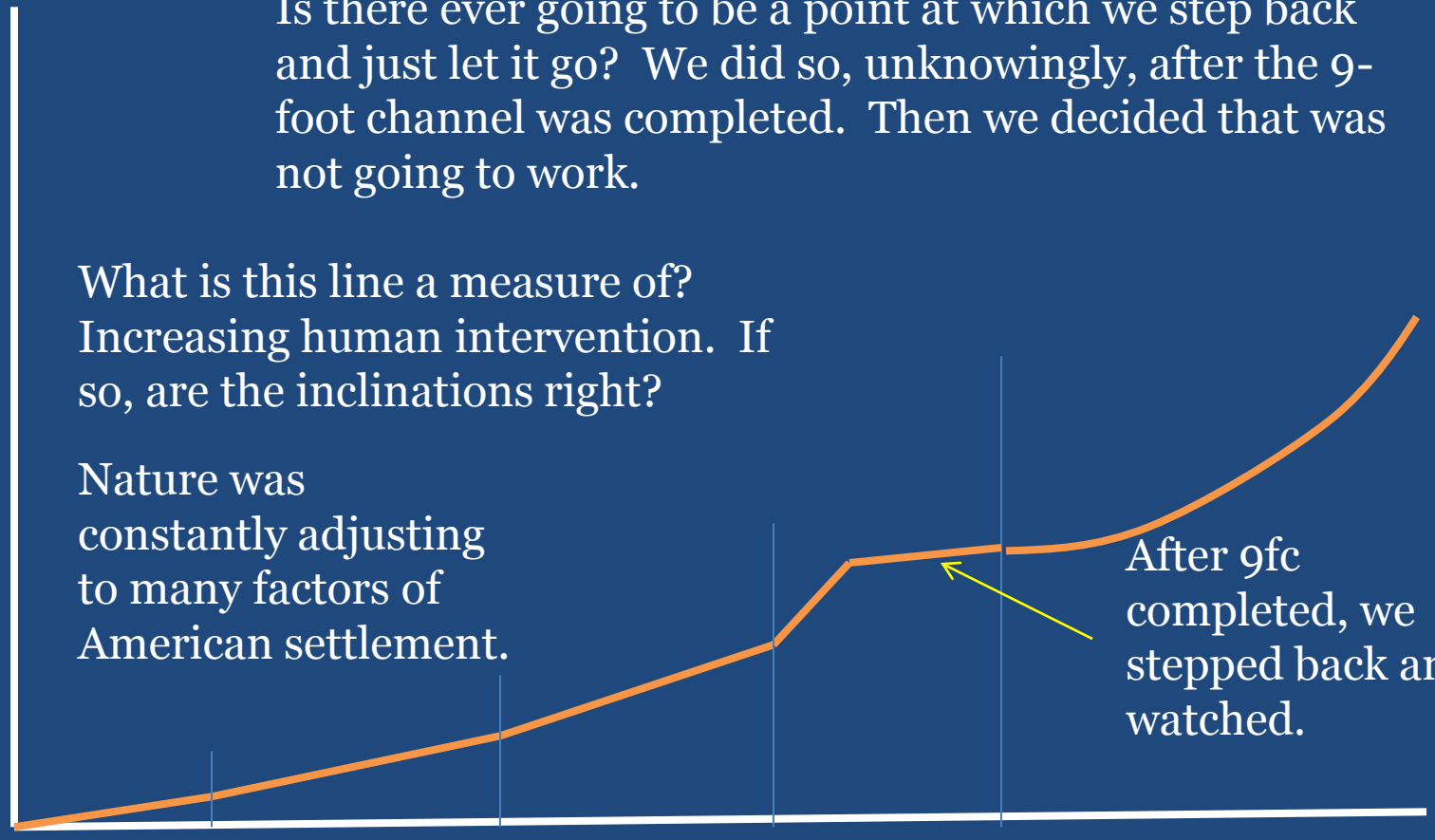
Ever Increasing Human Intervention?

Is there ever going to be a point at which we step back and just let it go? We did so, unknowingly, after the 9-foot channel was completed. Then we decided that was not going to work.

What is this line a measure of? Increasing human intervention. If so, are the inclinations right?

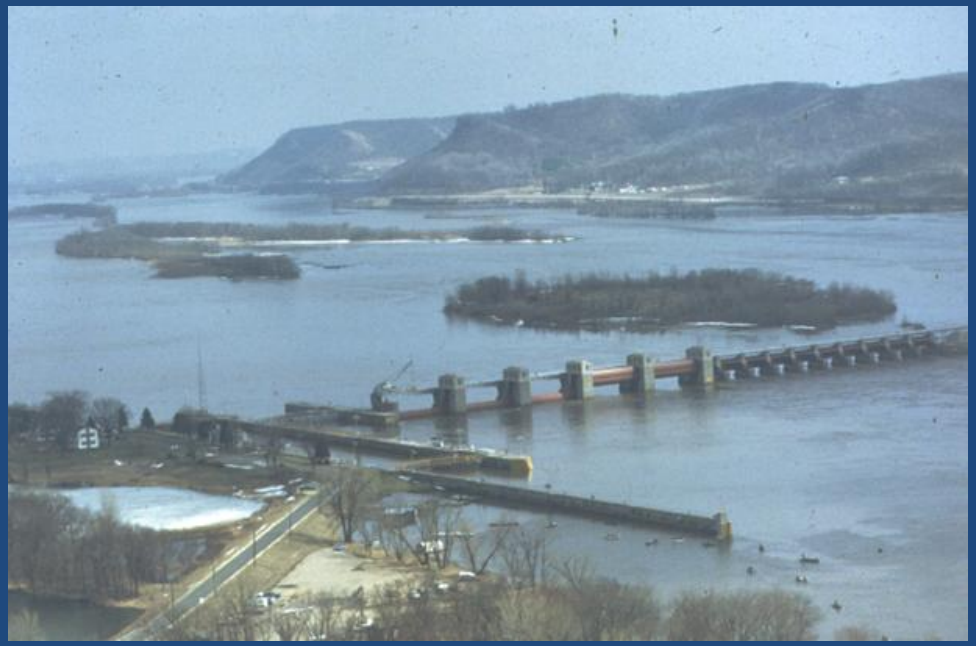
Nature was constantly adjusting to many factors of American settlement.

After 9fc completed, we stepped back and watched.



4-foot 4.5-foot 6-foot 9-foot

Agricultural levee construction Ecosystem restoration



First Three Upper Mississippi Rivers

1. Natural River, Up to 1878

2.Constricted River, 1878-1930s

3. Locked & Dammed River, 1930s-Present

New issues to consider

- Relation of this talk to water quality.
  - How does water quality play out under the hydraulic trap argument.
  - How does it play out with re to the Mississippi River?
- As ecosystem declines, water quality can:
  - Accelerate or slow that decline.
  - Improved water quality cannot stave off the collapse as long as the trap is in place; improvement in water quality alone not enough.